



Since 2013 she works for the GIZ Program “Proklima” and is managing the project "ODS Banks" funded by the International Climate Initiative (IKI) of the German Federal Ministry of Environment, Nature Conservation and Nuclear Safety.

She holds a diploma in Geography, with an emphasis on Economics and Latin American Studies. She managed projects and studies with a focus on the implementation of environmental policy and regulation at international and national level on ozone layer protection, climate change, waste management and persistent organic pollutants.

**Ms. Franziska Schmittner**  
Project Manager. GIZ - Proklima

# WEBINAR SERIES

## CLOSING THE LOOP: ENVIRONMENTALLY SOUND MANAGEMENT OF END-OF- LIFE ODS AND HFC

Global ODS/HFC Banks  
An overview of available  
information, status quo and  
projections

Franziska Schmittner  
GIZ Proklima



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UNIDAD TÉCNICA OZONO  
Colombia



This webinar is being organized within the  
framework of a project funded by US EPA



# Agenda

- The ODS Banks Project
- Awareness raising clip:  
ODS/HFC Banks – Why do we care?
- Methodology, status quo and projections
- Next steps and recommendations
- Publications



## GIZ Proklima

- Programme established in 1995 in the context of implementing technical projects under the Montreal Protocol
- Promoting and introducing natural refrigerants and energy-efficient appliances in the refrigeration and air-conditioning and foam (RAC&F) sector
- Supporting around 40 partner countries in the field of integrated ozone and climate protection

On behalf of



Federal Ministry  
for Economic Cooperation  
and Development



Federal Ministry  
for the Environment, Nature Conservation  
and Nuclear Safety

of the Federal Republic of Germany



## The ODS Banks Project

- Funded by the German Federal Ministry for Environment, Nature Conservation, Building and Nuclear Safety (BMU) within the framework of the International Climate Initiative (IKI)
- Project duration: November 2013 – June 2021
- Global project, with 5 partner countries: Colombia, Dominican Republic, Ghana, Iran and Tunisia
- Partner institutions: ministries of environment/ industry/ technology and their national ozone units
- Stakeholders: ministries, public institutions, private sector, NGOs, technology supplier, consumers

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für Internationale  
Zusammenarbeit (GIZ) GmbH

On behalf of:



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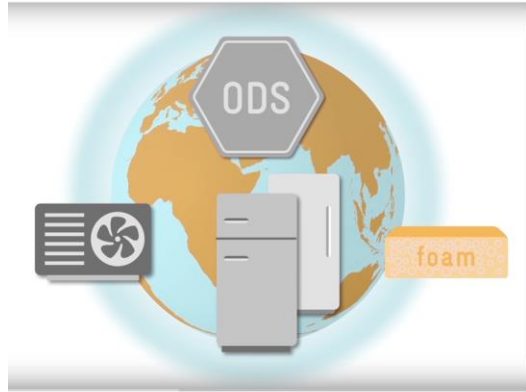


## Awareness Raising Clip for an adequate collection, recovery and destruction of ODS banks



- Link: <https://www.youtube.com/watch?v=DZH34n9W7tM>  
(incl. Subtitles in arabic, english, french, persian, spanish)

## Global ODS and HFC Banks



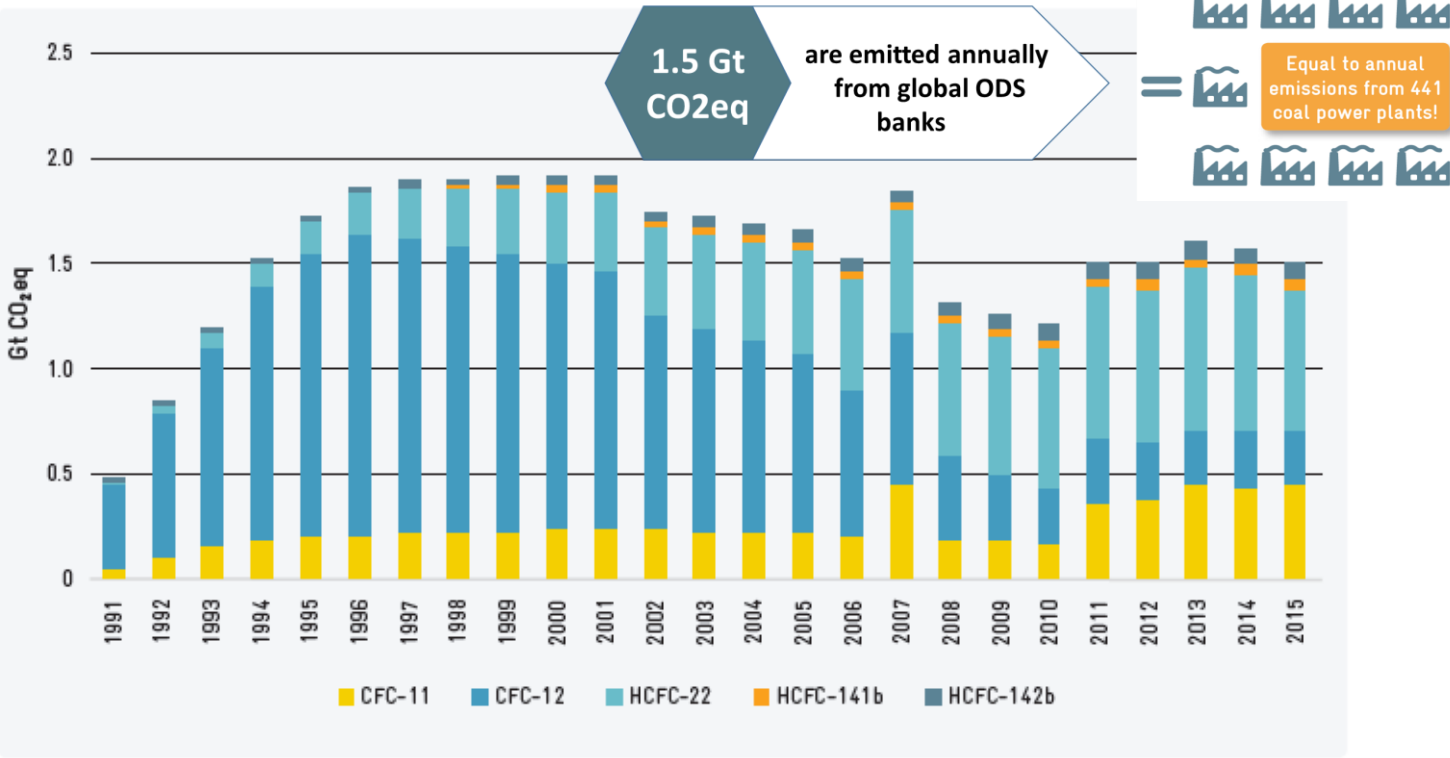
The excessive use of **ozone depleting substances (ODS)**, which are found in old refrigerators, insulation foam or cylinders, in the past has led to the accumulation of large ODS banks globally.

9.2 Gt  
CO<sub>2</sub>eq

**Global ODS  
bank in 2016**

Banks are defined as the “**total amount of substances contained in existing equipment, chemical stockpiles, foams and other products not yet released to the atmosphere**”  
(IPCC/TEAP, 2005)

# Emissions of ODS Banks



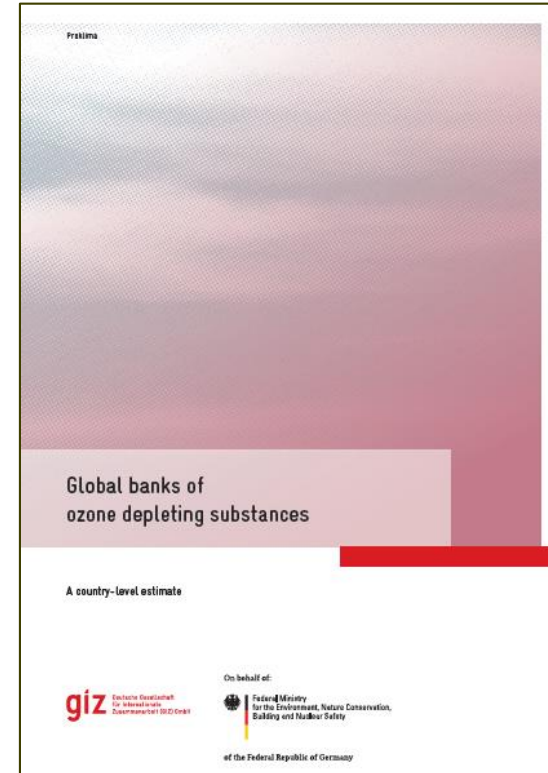
Source: GIZ – Global Roadmap on ODS bank management (2017)



# Methodology: Global Banks

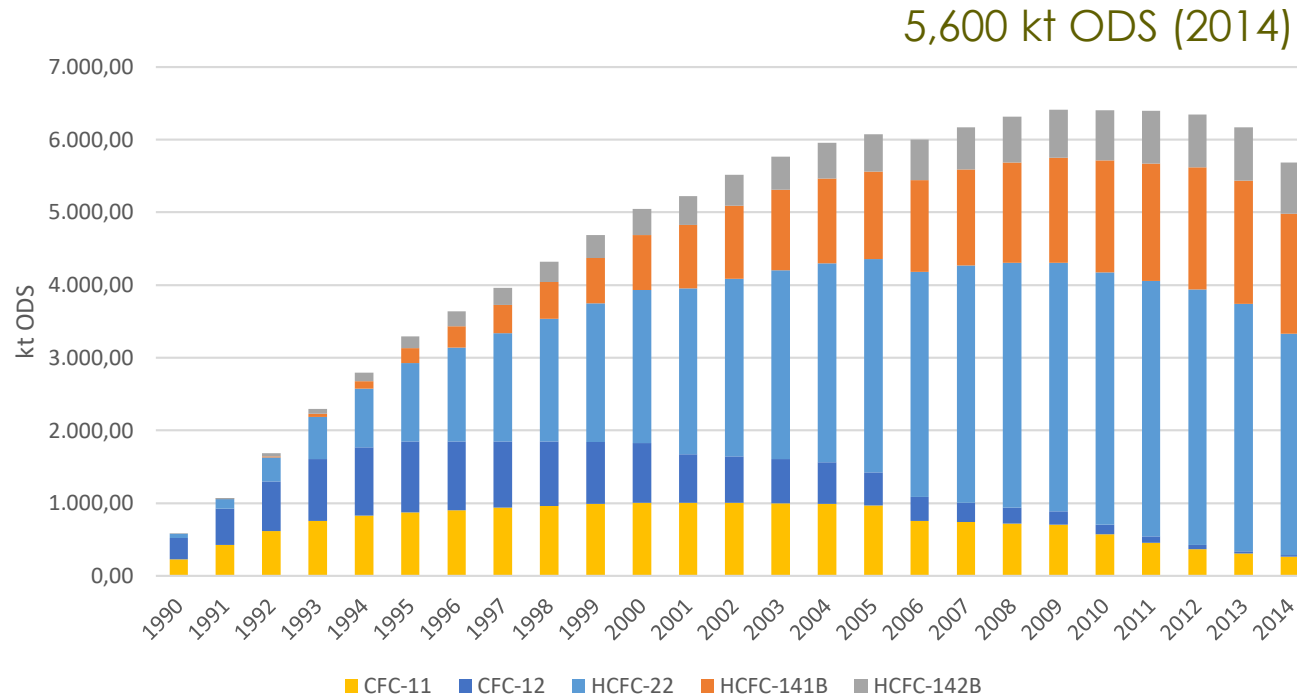
## A country-level estimate

- Basis: Data from all countries operating under the Montreal Protocol and their consumption of the gases CFC-11, CFC-12, HCFC-22, HCFC-141b, HCFC-142b
- Sector distinction between foam and RAC
- Consumption corrected by import and export from pre-filled equipment (refrigerators and split ACs)
- Bank calculated separately for both sectors according to logic of the IPCC Good Practice Guidelines 2006
- Detailed methodology and calculation explained in the study



Available for download  
[here](#).

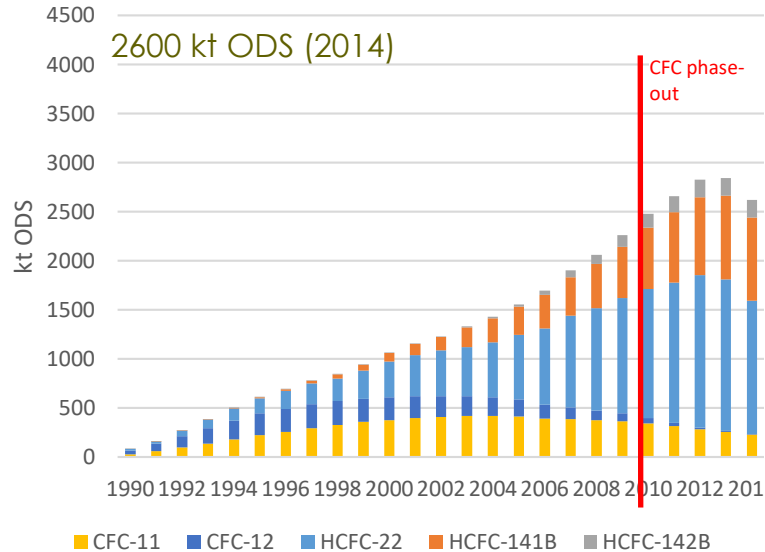
## Status quo: Global ODS Banks



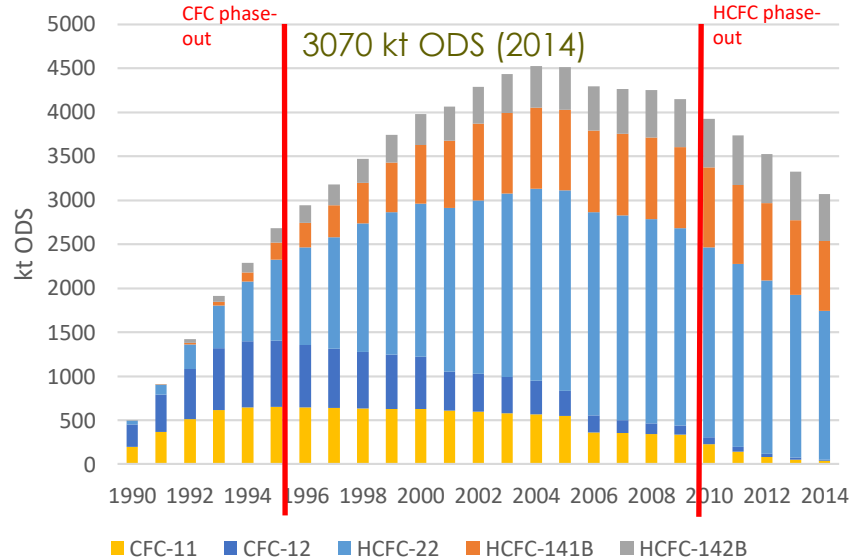
Source: GIZ – Global banks of ozone depleting substances (version 2.0) (2018)

## Status quo: ODS Banks in Country Groups

### ODS banks in A5 countries

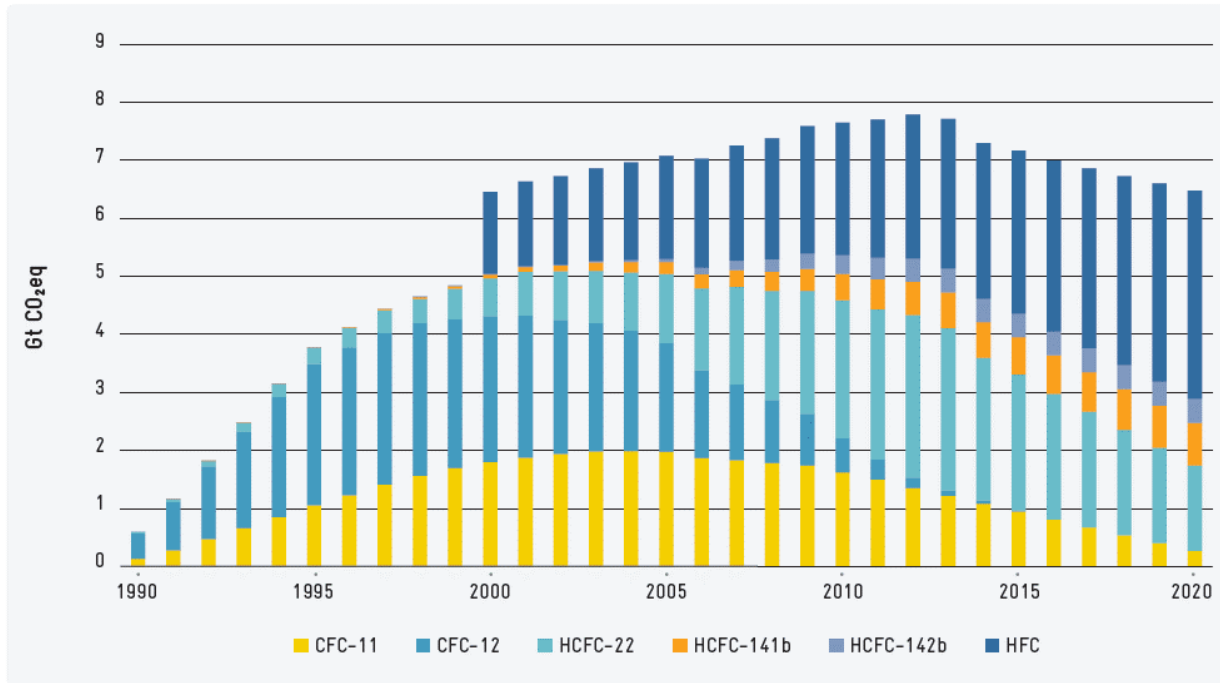


### ODS banks in non-A5 countries



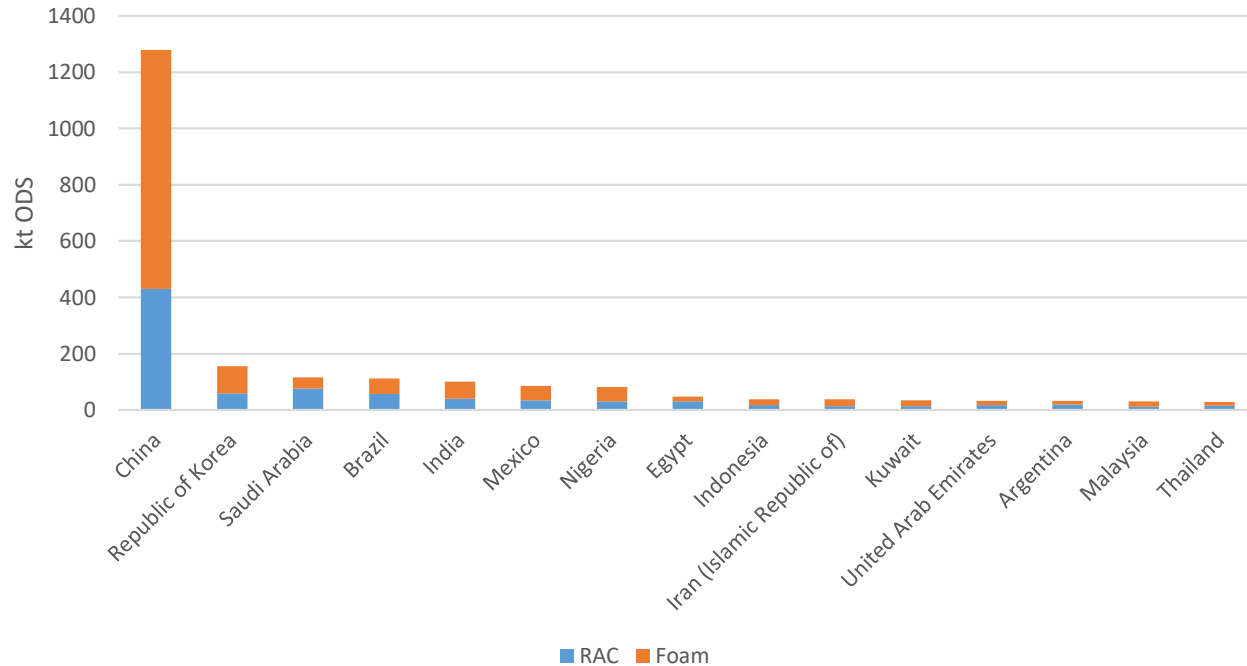
Source: GIZ – Global banks of ozone depleting substances (version 2.0) (2018)

## Status quo: ODS and HFC Banks in Article 5 Countries



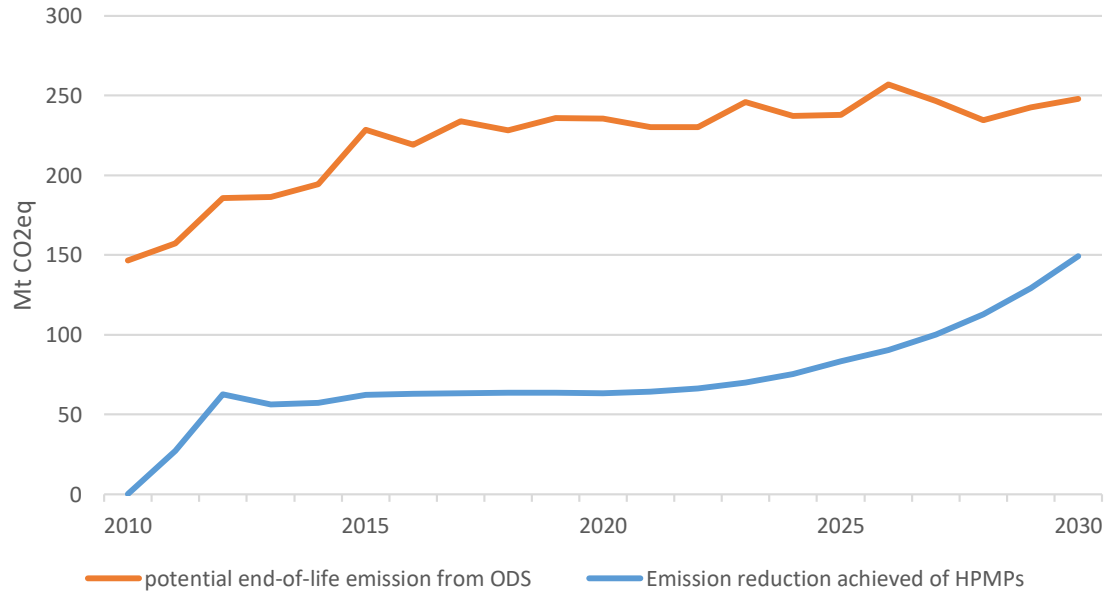
Source: GIZ – Global banks of ozone depleting substances (version 2.0) (2018)

## Status quo: ODS Banks – Top 15 in A5 countries



Source: GIZ – Global banks of ozone depleting substances (version 2.0) (2018)

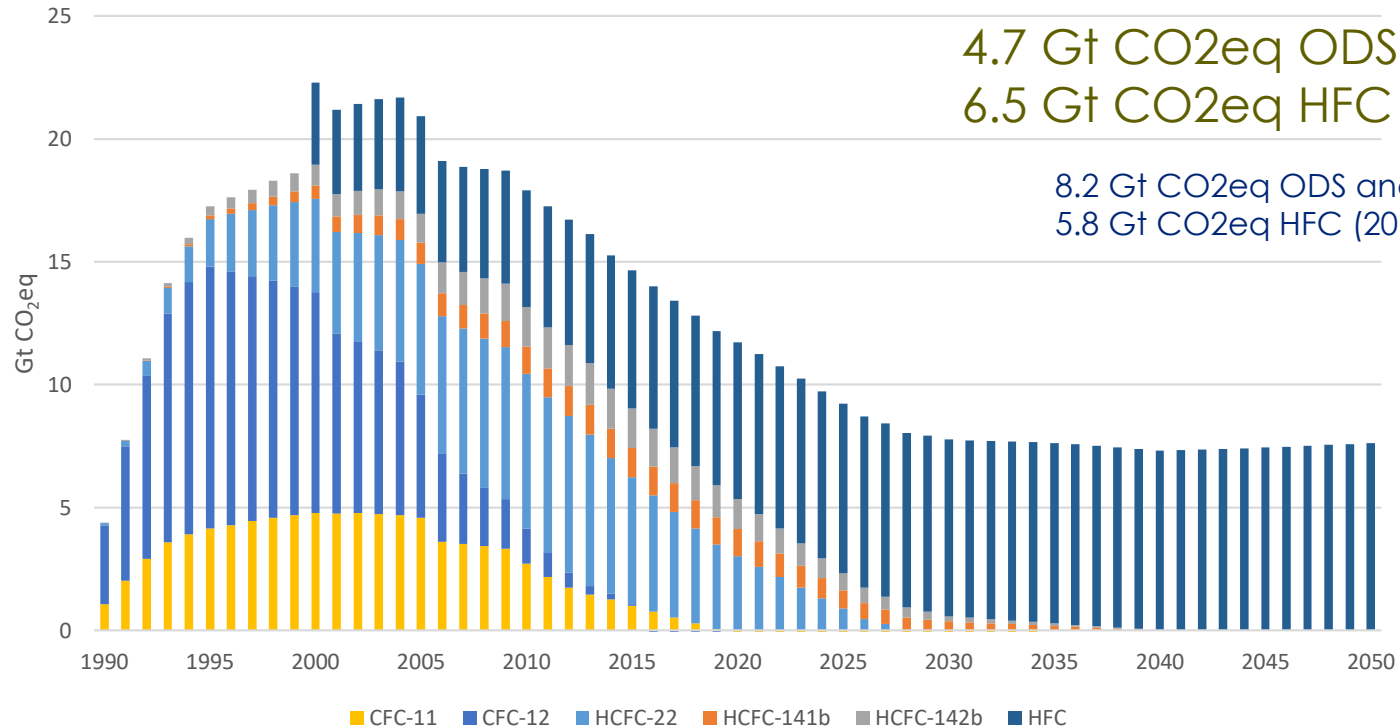
## Projections: Potential end-of-life emissions from ODS bank and estimated emission reduction due to HPMP activities



Source: GIZ – Global banks of ozone depleting substances (version 2.0) (2018)



## Projections: Global ODS and HFC Banks



Source: GIZ – Global banks of ozone depleting substances (version 2.0) (2018)

## Key elements of responsible ODS/HFC management

- Promote onsite recycling
- Use of reusable cylinders
- Adopt a take-back obligation with deposit-and-refund scheme
- Ensure accessible collection points for refrigerants or waste appliances
- Build a quality infrastructure



## Next steps and recommendations

- Further research required to monitor and amend additional data on ODS/HFC stocks and emissions from other sources (e.g. appliance sales statistics, containment practices, etc.)
- **Fast action needed: every day ca. 1Mt CO<sub>2</sub>eq of ODS and HFC are emitted – BUT a substantial percentage could be recovered!**
- With the increasing consumption of HFC, GHG emissions from the banks will continue to remain high
- Set up an international registry of ODS/HFC banks under the Montreal Protocol
- Conduct national ODS banks inventories
- Implement regulations on collection, reuse, recovery and reclamation of refrigerants

## Next steps and recommendations (2)

- Involve the private sector and place the financial responsibility on the producers or collective industry associations
- Enhanced responsibility of producers and distributors can also be supported through simple measures, e.g. charging a level on the sale of virgin refrigerants
- Reclamation should be prioritised over destruction and needs an established framework
- Concerted political action and financial mechanisms on international level is needed to support governments in developing countries and initiatives to reduce emissions from ODS/HFC banks

## ODS Banks – Publications

- Global Roadmap (2017): [here](#)
- Inventory Guideline (#1, 2017): [here](#)
- Policy Measures (#2, 2017): [here](#)
- Collection Systems (#3, 2017): [here](#)
- TBM (#4, 2017): [here](#)
- Manual Dismantling (2017): [here](#)
- Thermal Destruction of (H)CFCs and HFCs (2020): [here](#)
- Banks and Emissions of CFC-11 and CFC-12 (2020): [here](#)





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# Thanks for your attention

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**giz** Deutsche Gesellschaft  
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Zusammenarbeit (GIZ) GmbH

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